SPRING KNOWLEDGE ORGANISER

YEAR 7

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Art & Design

Literacy / key words: Cubism –

A type of art where objects are broken into shapes, like cubes and triangles, and shown from different angles at the same time. **Abstract** – A style of art that does not try to look exactly like real life but instead uses shapes, lines, and colours to express ideas or feelings.

Portrait – A drawing, painting, or sculpture of a person's face or body. **Primary Colours –** The three main colours (red, blue, and yellow) that can be mixed to make all other colours.

Shading – A drawing technique that uses light and dark areas to make objects look 3D.

Negative space:

Negative space is the empty space around and between the subject in a picture. It helps make the main object stand out and can create interesting shapes. For example, if you draw a tree, the tree itself is the **positive space**, and the sky or background around it is the **negative space**. Artists use negative space to make their drawings look clearer and more balanced.

Subject: the main focus in the piece.

YEAR 7 Portraiture

Appling coloured pencil: To blend with coloured pencils, start by layering light, gentle strokes of one colour, then gradually add another colour on top, using small circular motions to mix them smoothly. You can press lightly for a soft blend or build up layers for a richer effect. Using a white pencil or a blending tool can help make the colours look even smoother.

How to complete a drawing:

1. Sketch Lightly – Use a pencil to draw light, simple shapes to build your picture.
2. Add Details – Once you're happy with the shapes, start adding details like textures, patterns, or small features.
3. Shading or Colouring – Add shading to make things look 3D or use colours to bring your drawing to life.
4. Final Touches – Erase any extra lines, check for missing details, and make sure you're happy with your work!

Cubism:

Cubism is a style of art that breaks objects into simple shapes like cubes, triangles, and rectangles. Instead of drawing things exactly how they look, artists show them from different angles all at once. Pablo Picasso, a famous Spanish artist, helped create Cubism with another artist named Georges Braque.

Surrealism:

Surrealism is a type of art that looks like a dream—strange, imaginative, and sometimes even a little weird! Artists mix real things with impossible or magical ideas, like floating objects or animals with human faces. Pablo Picasso sometimes used surrealism in his paintings, creating unusual shapes and faces that didn't look realistic.

Extra - Read/watch/do

- Cubism- https://www.bbc.co.uk/bitesize/articles/zmncdnb
- Negative Space- https://www.bbc.co.uk/bitesize/guides/z23hp39/revision/4
- Surrealism- https://www.tate.org.uk/kids/explore/what-is/surrealism

PABLO PICASSO

Your paragraph text

Art & Design

Pablo Picasso

Picasso was a Spanish artist known for creating new art styles, like cubism, where he painted people and objects with broken-up shapes and angles. He also used bold colours, unusual shapes, and experimented with different textures in his work. Besides cubism, Picasso worked in many styles, including realism, surrealism, and abstract art. His creativity changed how people see art, making it more imaginative and expressive.

Collage

A collage is an art technique where you glue different materials like paper, fabric, or photos onto a surface to create a new image. It's a way to mix colours, textures, and shapes for unique effects.

Watercolour

Watercolour is a painting method using water to spread colour smoothly and lightly across the paper. It's great for creating soft, transparent layers and blending colours easily.

Sgraffito

Sgraffito is an art technique where you scratch through a top layer of paint or clay to reveal a different colour underneath. It creates interesting textures and patterns by showing the contrast between the layers. It is often used in pottery.

What techniques will I learn?

Oil Pastel Transfer

Oil pastel transfer as a printing method involving colouring an area with oil pastels, placing a clean sheet of paper on top, and then drawing or pressing over it to transfer the pastel onto the new sheet.

Relief sculpture

Relief is an art technique referring to building on top of a base to create a 3D outcome. You will be using relief to create a 3D cardboard, Pablo Picasso inspired portrait. You will then use coloured tissue paper and PVA glue to add bold colours.

You will be assessed on

- Term 1 - Self-Portrait (tonal shading)
- Term 2 - Negative space (oil pastel transfer)
- Term 3 - Picassoportrait (watercolour)

Links to curriculum

English and History - In our lessons, we will look at different artists and talk about their artwork, helping you learn to describe and discuss what you see.

GREEK THEATRE

Canon – moving one after another (the same movement)

Choral Speaking – Saying exactly the same lines as each other at the same time

Key Question: What is a Amphitheatre? What was theatre like in Ancient Greece?

Amphitheatre

- The stage where the actors performed was called the Skene
- The Theatron was the semi-circular seating area.
- The semi-circular dancing space where the chorus performed was called the Orchestra
- The Skene had underground passages, trap doors and different staging levels
- Parodos on each side of the stage. They were used for the chorus to enter and exit the Orchestra.

1. The chorus was one of the most important components of the play.
2. They narrated and reflected on the action.
3. Without them, the audience would have no background information, and the play would be more confusing.
4. Originally the chorus had **twelve** members.
5. They moved and spoke as one **(Choral Speaking)**

They sang, or sometimes said, basic information.

RHYTHM and PULSE

Year 7 Spring Term

KEY WORDS–test yourself! (definitions on the next page)

Semibreve Minim Crotchet Quaver Semiquaver
Rhythm Duration Tempo Time signature
Pulse/Beat Bar

NOTE NAMES, VALUES AND RESTS

name	relative length	note	rest	in $\frac{4}{4}$ time
semibreve	whole note			4 beats
minim	half note			2 beats
crotchet	quarter note			1 beat
quaver	eighth note			½ beat
semi quaver	sixteenth note			¼ beat

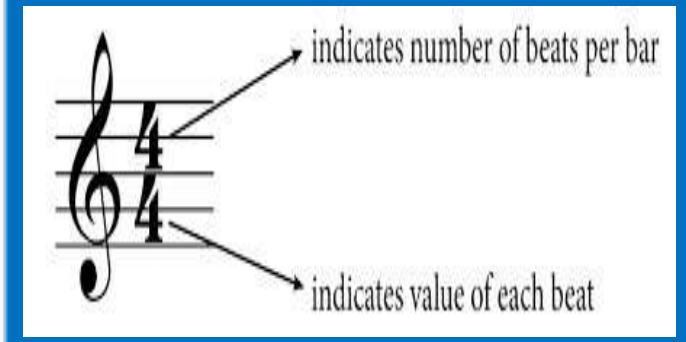
TEMPO MARKINGS

Mouth

Time signature

Atime signature is found at the beginning of a piece of music and simply tells you how many beats to count in each bar (small section of music)

It looks like a fraction:



There are lots of different time signatures but you will be using this one which means you are counting 4 crotchet beats per bar.

KEY WORDS AND MEANINGS (Tier2 words in ORANGE, Tier 3 words in BLUE)	
Semibreve	A note that lasts for 4 beats
Minim	A note that lasts for 2 beats
Crotchet	A note that lasts for 1 beat
Quaver	A note that lasts for ½ of a beat
Semiquaver	A note that lasts for ¼ of a beat
Rhythm	Different lengths (durations) of notes mixed together create a rhythm. This fits into the beat.
Duration	The length of a note
Tempo	The speed of the music
Time Signature	A sign (looks like a fraction) that tells us how many beats are in each bar
Beat	The pulsein music

English Spring 1: Powerful female characters

Literacy/ keywords

Vivacious: Lively, spirited, and full of life. **Accomplished**: Skilled in various pursuits

Tenacious: Persistent and determined in holding onto or seeking something.

Inquisitive: Eager to learn and investigate; curious about details and underlying truths.

Elusive: Difficult to find, catch, or achieve.

Perceptive: Having a keen understanding or insight into things; able to notice and understand things that are not

High tierpunctuation:

- √ **!** = shows strong emotion
- √ **?**
- √ **;** (connects two main clauses/ 'replaces and' or full stop)
- √ **:** (introduces list, separate subordinate clause, 'replaces because')
- √ **( )** (introduces extra information, subordinate clause)
- √ **– … –** (introduces extra information, subordinate clause)
- √ **–** (one dash shows a pause)
- √ **…**

Dialogue punctuation:

- "Speech marks"
- New line for each new speaker
- Punctuation inside speech marks e.g. *"Get down!" shouted Scarlett.*
- If the speech verb comes in the middle of dialogue, it also needs punctuation e.g. *"Get down," shouted Scarlett. "I'll cover you!"*

Creating character

The things they say

- √ Shouted/Screamed
- √ Whispered
- √ Laughed/ chuckled
- √ Reassured
- √ Ordered/ demanded
- √ Snarled

Backstory

- √ Job
- √ Childhood
- √ Goal/ aim

How they treat others

Physical description

- √ Eyes/ hair/ smile
- √ Body/ hands/ arms/ legs
- √ Clothes
- √ Accessories (sunglasses, weapons, phone etc)
- √ Jewellery
- √ Tattoos/ scars

Actions

- √ Strolled/ sprinted/ crept/ chased/ pursued
- √ Fought/ kicked/ attacked/ punched
- √ Searched/ found
- √ Looked/ gazed/ stared/ glared/ watched
- √ Hid/ followed
- √ Declared/ roared/ protested

TIF: Further reading

- *Little Women*, Louisa May Alcott
- *Emma,* Jane Austen
- *A good girls guide to murder*, Holly Jackson
- *A series of unfortunate events*, Lemony Snicket

You will be assessed on:

Writing assessment where you create and describe a powerful female character

Links to curriculum:

- History – strong female rulers
- PSHE – gender roles/ stereotypes

English Spring 1: Powerful female characters

Literacy / key words

Patriarchy
a system of society or government controlled by men

TIF – Adjectives Word Bank

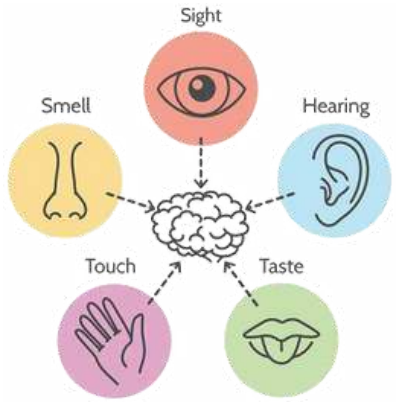
Sagacious: Exhibiting wisdom and good judgment.

Perspicacious: Having a keen ability to notice and understand things that are not obvious.

Judicious - Having or showing good judgment or sense.

Meticulous - Showing great attention to detail.

Sensory imagery



TECHNIQUES:

Simile: compares with like/as:

The city was buzzing like a hive.

Metaphor: compares directly

The moon was a golden coin.

Personification: describes non-human as human

The trees danced in the wind.

Rhetorical question: question to make the reader think

What should I do?

Zoomorphism: describes human as an animal

She snarled angrily.

Triplet/tricolon: list of 3

The storm was terrifying, fierce, and overwhelming.

Sibilance: alliteration starting with 's'

She smiled slyly and slipped forwards.

Hyperbole: Exaggeration

Her smile was as powerful as the sun

Paragraph rules

INTERESTING SENTENCE OPENINGS

√ ***Start with an adverb:*** Quickly, suddenly, angrily etc
Carefully, she looked round.
√ ***Start with a preposition:*** Above, around, below etc
Above her head, the stars twinkled.
√ ***Start with a verb:*** Running, laughing, watching etc.
Roaring, she sprang into action!
√ ***Start with a subordinate clause:***
Although her heart was racing, she crept forwards.
√ ***Start with a simile:*** like/as
Like a crashing wave, she charged forwards
√ ***Create a mystery:*** grab your reader's attention!
It was only meant to be a game. But it went wrong...

Sentence Forms

Minor: 1-2 words – *'Stop!', 'Go now!'* **Simple**: One main clause (Subject + verb) *'You need to leave'* **Compound**: Sentence with two main clause linked with **;** or a connective

'The lord was evil; he was plotting against the king.'

'It was a beautiful day and the sun was shining'.

Complex: Main clause with 1 or more subordinate clause

'Slowly, he rose to his feet'

'Although it was night, the streets were crowded'

Different sentence types have different effects:

√ *Minor/simple sentences* = slower pace and more tension
√ *Compound/complex sentences* = faster pace, quick action,

English Spring 2: Nature Poetry

Key Poetic Techniques:

Rhyme- The ends of the lines have the same sound *e.g. pie and sky.*

Repetition – A word or phrase is used more than once. *E.g. faster and faster, the cheetah ran…*

Onomatopoeia- When a word sounds as it is *e.g. boom.*

Metaphor- Two things are compared by saying one thing is the other *e.g. the sun was a glittering ball in the sky.*

Simile- Comparing something using 'like' or 'as. *E.g. the sun was like a glittering diamond.*

Personification- When an inanimate object is given human features. *E.g. the tree danced in the breeze*.

Hyperbole- Exaggeration *e.g. the sun melted my skin.*

Triplet – list of 3

Brief Summary of Poems:

Spellbound by Emily Brontë

This poem describes a storm, which appears to be 'trapping' the speaker like a spell. The storm is overpowering and threatening.

Below the Green Corrie by Norman MacCaig

This poem uses a lot of personification to describe the speaker's experience when he is surrounded by mountains. He experiences a range of emotions as a result of the beauty of the mountains.

Stormin the Black Forest by D.H. Lawrence

Thispoem describes the sheer power of nature over man- by describing the power and beauty of a storm. It goes into detail about the beauty and strengthof the lightening.

WindbyTed Hughes

In this poem, the speaker is trapped inside a house due to the ferocious winds outside. The poem describes how chaotic and dangerous the wind is outside. The speaker goes onto say how the wind and being trapped in the house takes a toll on their mental state.

TheMoment by Margaret Atwood

This poem reminds us of the power of nature over humanity. In the poem nature is given a voice and it threatens humanity. It states even though humans feel they are in control, nature can take back that control at any time.

River Story by Brian Patten

This poem describes a river which is polluted over time by humans.

Hurricane by James Berry

This poem portrays the aftermath of a hurricane and the physical effects of such a powerful storm.

Daffodils by William Wordsworth

This poem considers the positive effects of being around nature and how it positively affects the wellbeing of people.

Extra Reading:

- *The lake isle of Innisfree,* William Butler Yates
- *Stopping by the wood on a snowy night,* Robert Frost
- *Wild Geese,* Mary Oliver
- *Nature is what we see,* Emily Dickinson

You will be assessed on:

Reading assessment analysing one of the previously studied poems

Links to curriculum

Science – natural forces

Geography – natural disasters

English Spring 2: Nature Poetry

Adjectives to describe nature (P):

√ Beautiful
√ Dangerous
√ Powerful
√ Threatening
√ Sinister
√ Magnificent
√ Fascinating
√ Fascinating
Revitalising/ reinvigorating (*makes you feel better/ full of energy*)
√ Tranquil/ peaceful
√ Sacred (holy)
√ Refreshing/ soothing
√ Awe-inspiring
√ Precious/ important

Sentence starters:

- **P**. The poet presents… as…
- **E.** This is shown in the quote "…".
- **A.** This implies/suggests... because...
- **R**. The reader will think/feel... because...

TIF:

- **A**. Also, the (*adjective/ verb etc*) emphasises...
- **A**: The (*structure technique*) also suggests…
- **R**: The writer intended to… because…

EXT:

- **This contrast to (*different poem*) because…**
- **Similarly/ likewise/ conversely/ in contrast… because…**

Key Quotes/techniques from Poems

Spellbound

'A tyrant spell has bound me' (Metaphor) 'The wild winds coldly blow'(Adjective) ***Below the Green Corrie*** 'The mountains gathered around me like bandits' (Simile) 'Their leader swaggered up close in the dark light' (personification)

Storm in the Black Forest

'Jugfull after jugfull of pure white liquid fire' (repetition/ metaphor)

'A still brighter white snake wriggles among it' (metaphor)

Wind

'woods crashing through darkness' (onomatopoeia)

'Winds stampeding the fields' (verb)

The Moment

'trees unloose their soft arms from around you'(personification)

'air moves back from you like a wave' (simile)

Hurricane

'Zinc sheets are kites.' (metaphor)

'Then growling it slunk away.' (personification)

Daffodils

'Fluttering and dancing in the breeze.'(personification)

'Ten thousand saw I at a glance' (hyperbole)

Verbs of inference (E & A):

√ Presents
√ Describes
√ Shows
√ Reveals
√ Portrays
√ Suggests
√ Implies
√ Emphasises
√ Highlights
√ Has connotations of
√ Develops

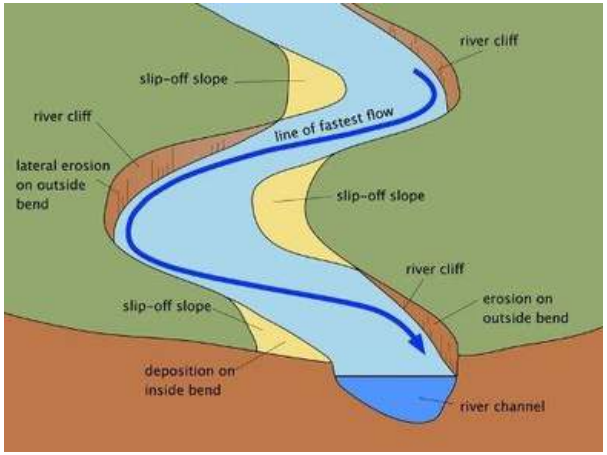
Writer intent/ reader response (R)

√ Think/feel
√ Understand/ recognise
√ Criticise
√ Warn
√ Celebrate
√ Encourage
√ Protect
√ Like/ dislike
√ Visualise (*imagine clearly in your mind*)
√ Fear

GEOGRAPHY: Year 7 – Rivers and Flooding

E) River Features: Meanders:

1	**meander**	(n) a bend in a river (middle course)
2	**slip-off slope**	(n) the sloping bend of a meander from the inside (shallow) to the outside (deep)
3	**river cliff**	(n) the undercut bank on the outside bend of a meander

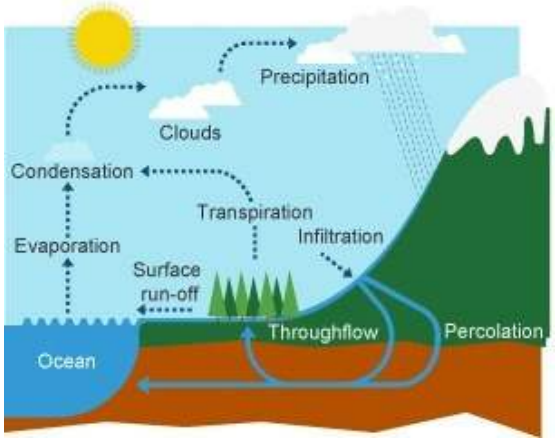


F) River Features - Floodplains:

1	**floodplain**	(n) a wide, flat area of land that is flooded frequently when a river bursts its banks (lower course)
2	**levee**	(n) banks found at the side of a river in the lower course
3	**silt**	(n) the fine, fertile eroded material transported by a river

G)TheDrainageBasinSystem:

1	**precipitation**	(n) water falling to the ground in all forms (rain, snow, sleet and hail)
2	**interception**	(n) when the leaves of trees stop precipitation reaching the ground
3	**surface runoff**	(n) the movement of water over the surface of the land back into a river
4	**surface storage**	(n) water stored on the surface in lakes or puddles
5	**infiltration**	(n) the movement of water from the surface into the soil
6	**throughflow**	(n) the movement of water through the soil back into the river



H) Case Study – The Somerset Levels, UK:

Where/when	Southwest England, flood 2014 Rivers Parrett and Tone	
Causes	Effects	Responses
deforestation on the floodplain	600 homes flooded	20,000 sandbags provided to protect homes
saturated ground from heavy rainfall	£200 million lost from the collapse of the tourist industry	65 pumps installed to drain millions of cubic metres of floodwater
low-lying land with four rivers flowing through it	6,800 hectares of agricultural land flooded	Hundreds of people were evacuated from their homes.
build-up of sediment in the channel from lack of dredging	Native bird species couldn't hunt on the flooded ground.	The Environmental Agency is spending £6 million a year on dredging the rivers Parrett and Tone.

Extra - Read/watch/do:

- Read: Journey to the river Sea by Eva Ibbotson.
- Watch: Planet Earth – Fresh Water to see the transformation of rivers from source to mouth, as well as the wildlife that rely on them.
- Do – walk along the River Mersey and consider the natural features that you see, along with hard and soft-engineering strategies being used to prevent floodsfromdamaging homesand businesses in our local area.

Assessment skill: Describing

When you are writing to describe geographical features, aim to include:

- Specific key terms as well as their definitions
- Give the complete process from beginning to end without missing out any parts of the process.
- Aim to say how one element of the process leads to another
- Write the process in the correct order!

Links to curriculum:

We will study other ways that water affect our landscapes when we study coasts and glaciated regions, later in KS3. We will study rivers again at GCSE!

GEOGRAPHY: Year 7 – Rivers and Flooding

Background:

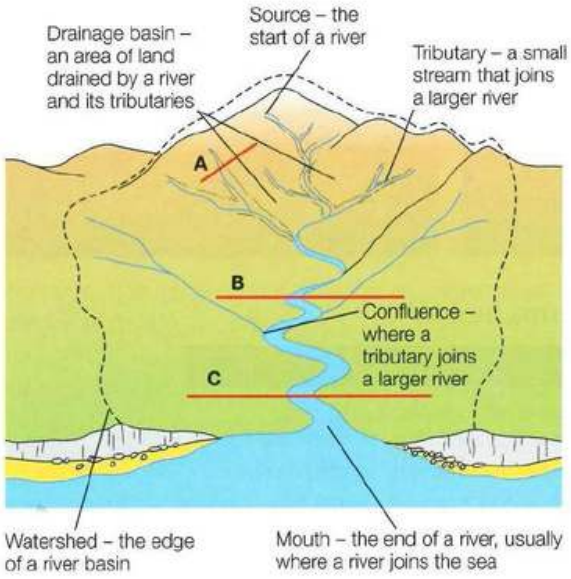
	Rivers affect the landscape and the lives of the people who live near them.
A	**Rivers are found within their own drainage basin and have their own distinct features.**
B	**As a river moves from its source in the upper course to its mouth in the lower course, its profile changes.**
C	**There are many different river processes that can impact the landscape.**
D–F	**The processes of erosion and deposition can lead to the formation of different river landforms.**
G	**Flooding is a key feature of rivers, and drainage basin processes play a significant role in this. By altering the drainage basin of a river, we can interfere with these processes.**
H	**There are many examples of floods. Today, many strategies have been put in place to manage the flood risk.**

C) River Processes:

river load	(n) the material carried along in the river
1 **erosion**	(n) the breaking down or wearing away of material.
vertical erosion	(n) erosion which takes place downwards into the land.
lateral erosion	(n) when erosion moves across the land from side to side, causing the bends of meanders to widen.
2 **transportation**	(n) when rivers carry rocks and sediment along their journey
3 **deposition**	(n) when a river drops its load

A) DrainageBasin Features:

1	**drainage basin**	**(n)** an area of land drained by a river and its tributaries
2	**source**	(n) the start of a river
3	**mouth**	(n) the place where the river enters a lake, sea or ocean
4	**tributary**	(n) a smaller river that joins a larger river
5	**confluence**	(n) the point at which two or more rivers meet
6	**watershed**	(n) the dividing line between two drainage basins

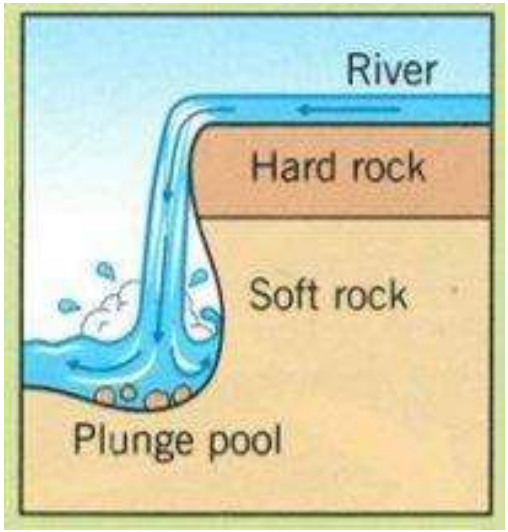


B) The River Profile:

1	**upper course**	the narrow, steep, upper part of a river, which contains waterfalls
2	**middle course**	the wider, deeper channel, which contains meanders and oxbow lakes
3	**lower course**	the widest, flattest part of the river near the mouth, which contains the floodplain.

D) River Features - Waterfalls:

1	**waterfalls**	**(n)** water falling from a height when a river or stream flows over a steep drop (upper course)
2	**plunge pool**	(n) an area at the base of a waterfall that undercuts the hard rock layer
3	**gorge**	(n) a steep sided valley left behind when a waterfall retreats upstream



Topic 3 – Medieval Religion

Key Vocabulary

1 chivalry	(n) the qualities expected of an ideal knight including courage, honour, and being prepared to help those in need.
2 Church	(n) the institution of the Christian Church, including all the people who ran it and all the individual churches.
3 church	(n) a Christian place of worship.
4 clergy	(n) officials of the Church led by the pope.
5 crusade	(n) wars between European Christians and Middle Eastern Muslims that occurred 1095-1291.
6 excommunication	(n) power of the pope to expel someone from the Church.
7 laity	(n) ordinary people who attend church but do not hold official religious positions.
8 martyr	(n) a person who suffers or is killed because of their religious or political beliefs.
9 mass	(n) religious service on a Sunday that worshippers were expected to attend.
10 monastery	(n) a building in which monks live and worship.
11 persecution	(n) unfair or cruel treatment over a long period of time because of race, religion or beliefs.
12 pilgrimage	(n) a journey typically taken to a site of religious importance.
13 purgatory	(n) a place where an individual's soul stayed until all their sins had been forgiven.
14 relic	(n) part of a saint's body or something they owned which was believed to have the power to perform miracles.

Themes and threads

Power

The control a person or group has in a country.

For example, the Church had their very own hierarchy compromised of the pope, archbishop, bishops, priests, monks and nuns.

This includes threads such as warfare and protest.

Identity

The qualities and characteristics that make a person who they are and what they value as important.

For example, while Christianity (Catholicism) was the most common religion in medieval England, people following other faiths lived in England at this time too.

This includes threads such as the role of women.

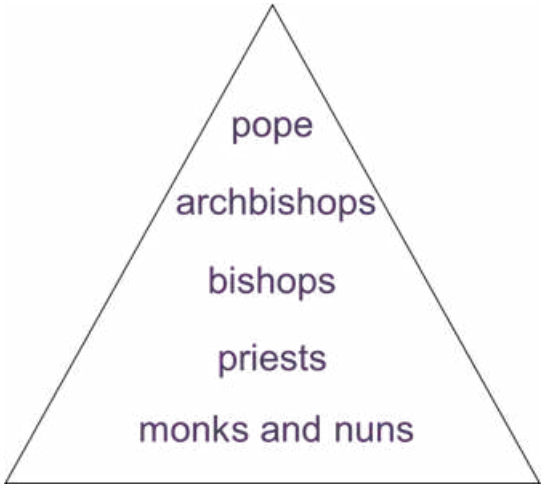
Connectivity

The act of joining or being linked to somewhere, someone or something else.

For example, Jews migrated to England in 1070, invited by William I.

This includes threads such as trade and medicine.

Church hierarchy



Extra - Read/watch/do

The Medieval Church:
https://www.youtube.com/watch?v=eyZ1JhT1h24

The Power of the Church:
https://www.youtube.com/watch?v=lVsAykBb92U

You will be assessed on:

The medieval church, the afterlife, doom paintings, the significance of the Church

Topic 4 – Medieval Monarchs

Key Vocabulary

1	baron	(n) a person who held land or property given by the monarch or a powerful overlord.
2	challenge	(n) to make a rival claim or to threaten someone's hold on a position.
3	dynastic	(adj) relating to a line of rulers from the same family.
4	male primogeniture	(n) the first male born child is prioritised for succession.
5	miasma	(n) the idea that disease is caused by foul smelling air.
6	monarch	(n) king or queen.
7	rebellion	(n) often non-violent, organised resistance to authority over a long period of time.
8	revolt	(n) often a violent and sudden resistance which is short-lived.

People

Henry II	King from 1154 and married to Eleanor of Aquitaine. He tried to bring the Church under royal control, leading to the murder of Thomas Becket (Archbishop of Canterbury) in 1170.
Eleanor of Aquitaine	Queen of England and married to Henry II. Eleanor played an active role as Queen; she was left to rule England whilst Henry was away.
John I	King from 1199 and was deeply unpopular with his barons who rebelled against him and presented him with the Magna Carta in 1215.
Richard II	King from 1377 at 10 years old and was king during the Peasants' Revolt in 1381.
Wat Tyler	Leader of the rebels during the Peasants' Revolt in 1381.

Themes and threads

Power

The control a person or group has in a country.

For example, the power of the monarch was challenged during the Peasants' Revolt in 1381.

This includes threads such as class systems (feudal system), succession (male primogeniture), protest and democracy (Magna Carta)

Identity

The qualities and characteristics that make a person who they are and what they value as important.

For example, the role of women such as Eleanor of Aquitaine who played an active role as Queen.

This includes threads such as the role of women and beliefs.

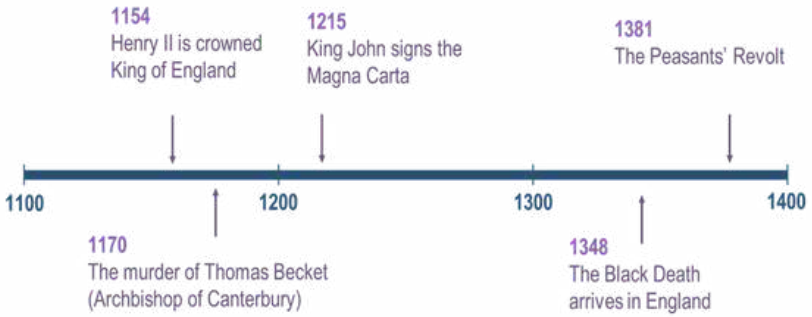
Connectivity

The act of joining or being linked to somewhere, someone or something else.

For example, the Black Death arrived in England in 1348 and there were several ideas about the causes of the disease and how to treat it.

This includes threads such as medicine.

Chronology



Extra - Read/watch/do

Eleanor of Aquitaine: https://www.youtube.com/watch?v=wMLE2stlCR8

Matilda and Stephen: https://www.youtube.com/watch?v=B1CrUeWNFDE

Links to curriculum

RE	English
Geography	French

You will be assessed on:

Matilda and Stephen, Eleanor and Henry II, King John, Black Death, Wars of the Roses.

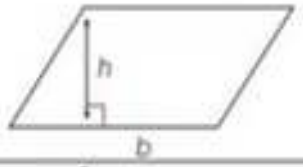
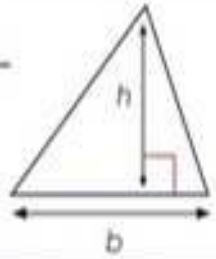
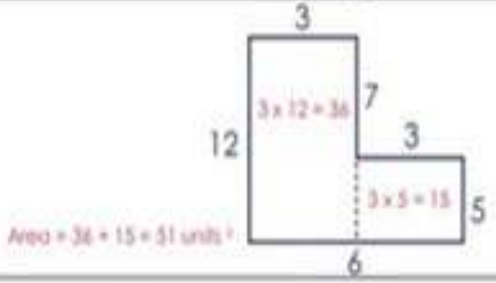
KPI 7.08 Mean

1) Average	A number expressing the central or typical value in a set of data.	**2) Mean**	The sum of the numbers divided by how many numbers are being averaged. E.g. Calculate the mean of 14, 6, 18, 2, 3. 1) Add the values: 14 + 6 + 18 + 2 + 3 = 43 2) Divide by 5 3) Mean is $\frac{43}{5} = 8.6$
3) Reversing the Mean	If we have the mean but one of the data points is missing, we can find the missing value by: 1) Multiplying the 'mean' by the number of data points to get the total of the values. 2) Subtracting the sum of the known values from the total of all values.	E.g. The mean of three numbers is 5. Two of the numbers are 3 and 10. Find the third value. Total of the values: 5 x 3 = 15 15 – (3 + 10) = 2 The third value is 2	

KPI 7.09 Multiplication and Division

1) Multiplication lots of, times, product, of	Multiplication is the operation of scaling one number by another. Multiplication is the inverse operation of division. Multiplication is commutative – the order of multiplication does not change the result. E.g. 2 x 3 = 3 x 2. Multiplication is associative – when you multiply you can do so regardless of how the numbers are grouped. E.g. 1 x (2 x 3) = (1 x 2) x 3		
2) Multiplying Integers	29 x 3 2 9 3 x 8 7 2	**3) Multiplying Decimals**	Remove the decimal points Multiply Insert the same number of decimal points in the answer as in the question **0.5 x 0.3** **5 x 3 = 15** **0.5 x 0.3 = 0.15**
4) Division	Division can be thought of as sharing. The number being divided is shared equally into the stated number of parts. Division is the inverse operation of multiplication. $D \div \blacksquare = \blacksquare \overline{)D} = \frac{D}{\blacksquare}$ E.g. $8 \div 9 = 9\overline{)8} = \frac{8}{9}$ 4524 ÷ 3 = 3 ⟌ 4524 = 1508 3 ÷ 8 = 8 ⟌ 3.000 = 0.375		
5) Dividend	The number being divided. 15 ÷ 3 → 15 is the dividend.	**6) Divisor**	The number by which another is divided. 15 ÷ 3 → 3 is the divisor.

KPI 7.10 Area

1) Area	A measure of the space inside a 2D shape. Area is measured in square units. E.g. square centimetres (cm^2), square metres (m^2).		
2) Area of a Rectangle	Area = length x width 	**3) Area of Parallelogram**	Area = base x height 
4) Area of Triangle	Area = $\frac{\text{base x height}}{2}$ 	**5) Compound Area**	Split into regular shapes Find the area of each Sum the areas 
6) Units of Area	1 cm^2 = 100 mm^2; 1 m^2 = 10,000 cm^2		
7) Area of Trapezium	Sum of the parallel sides. Divide by 2. Multiply by the vertical height.	$A = \left(\frac{a+b}{2}\right) \times h$	

KPI 7.11-7.14 Fractions

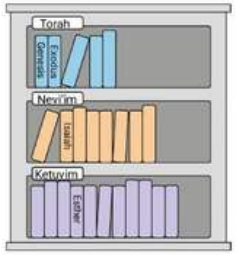
1) Fraction	Part of a whole. The result of dividing one integer by a second (non-zero) integer.	$\frac{3}{4}$ **Numerator** *How many equal parts do you have?* **Denominator** *How many equal parts is the whole divided into?*	
2) Proper Fraction	The numerator is smaller than the denominator e.g. $\frac{5}{6}$	**3) Improper fraction**	The numerator is greater than or equal to the denominator e.g. $\frac{11}{8}$
4) Mixed number	A whole number combined with a fraction. e.g. $2\frac{1}{3}$	**5) Simplify a fraction**	Divide both the numerator and the denominator of the fraction by their HCF. $\frac{6}{14} = \frac{3}{7}$ (÷ 2)
6) Writing one number as a fraction of another	Write £15 as a fraction of £25. $\frac{15}{25} = \frac{3}{5}$		
7) Equivalent Fractions	Fractions which have the same value. The numerator and the denominator can be multiplied or divided by the same number.	E.g. Fractions equivalent to $\frac{3}{5}$:	$\frac{3}{5} \times \frac{2}{2} = \frac{6}{10}$; $\frac{3}{5} \times \frac{3}{3} = \frac{9}{15}$; $\frac{3}{5} \times \frac{4}{4} = \frac{12}{20}$; $\frac{3}{5} \times \frac{10}{10} = \frac{30}{50}$
8) Convert an integer to a fraction	Whole numbers are an integer with a denominator of 1.	$3 = \frac{3}{1} = \frac{15}{5}$ (x 5)	
9) Converting an improper fraction to a mixed number	Divide the numerator by the denominator. Write down the whole number of the answer and the remainder as the numerator of the fraction. The denominator of the mixed number is the same as the denominator of the improper fraction.	$\frac{15}{7} = 2\frac{1}{7}$	
10) Converting a mixed number to an improper fraction	Change the whole number into a fraction (same denominator) and add on the fraction part.	$2\frac{3}{4} = \frac{8}{4} + \frac{3}{4} = \frac{11}{4}$	
11) Add/Subtract Fractions	Make the denominators the same (find the LCM). Use equivalent fractions to change each fraction to the common denominator. Add/subtract the numerators only.	$\frac{2}{7} + \frac{2}{5} = \frac{10}{35} + \frac{14}{35} = \frac{24}{35}$	
12) Order Fractions	Find the lowest common denominator. Write equivalent fractions with the LCD. Order from the smallest to largest numerator. Rewrite original fractions in the new order.	$\frac{2}{3}$, $\frac{5}{6}$, $\frac{4}{5}$ $\frac{20}{30}$ (1), $\frac{25}{30}$ (3), $\frac{24}{30}$ (2) $\frac{2}{3}$, $\frac{4}{5}$, $\frac{5}{6}$	
13) Convert fractions to decimals	Use short division. E.g. to convert $\frac{3}{8}$ to a decimal: $8 \overline{)3.000} = 0.375$	**14) Fractions of an amount**	We divide the amount by the denominator and then multiply the result by the numerator. E.g. $\frac{2}{7}$ of 35: $35 \div 7 = 5$, $2 \times 5 = 10$

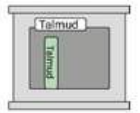
Exodus	A book in the Bible which tells the story of the Israelites out of slavery.
Shema	An important prayer, declaring the oneness of God.
Messiah	A future Jewish king who is expected to bring peace.
Genesis	A book in the Bible which describes the creation of world.
Mitzvot	613 rules in the Torah which guide Jews in their behaviour.
Tikkun Olam	'Repairing the world,' encouraging actions that improve society and bring justice.
Synagogue	A Jewish place of worship, study and community
Bar/Bat Mitzvah	Coming of age ceremony (Bar Mitzvah for boys and Bat Mitzvah for girls
Shabbat	A day of rest and worship observed from Friday evening to Saturday evening.
Orthodox	A branch of Judaism that follows traditional beliefs, laws and practices.
Progressive	A branch of Judaism that adapts traditional beliefs, laws and practices to fit modern life.
Prophecy	A message give to humans from God, usually a prophet.

YEAR 7: What are the key beliefs of Judaism?

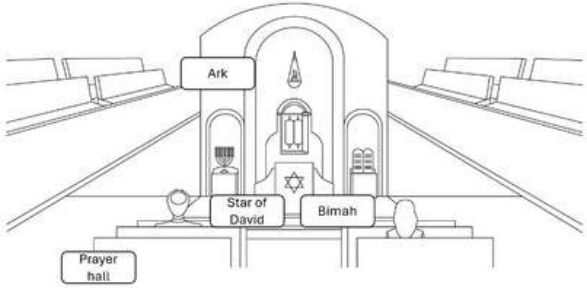
Key holy books

The Tanakh	Hebrew Bible, which includes three parts: the Torah, Nevi'im and Ketuvim.
The Torah	Holiest scripture for Judaism. The word means "law" in Hebrew. Written by Moses. Also important in Christianity and Islam.
Nevi'im	Contains books of the Prophets, which tell the history of Israel God's messages through the prophets.
Ketuvim	Contains various writings, including poetry, wisdom literature and historical accounts.
Talmud	Contains discussions and interpretations of the Torah, which guides Jewish law and practice.





Practice	Orthodox Judaism	Both Orthodox and Reform Judaism	Reform Judaism
Shabbat	No electricity No driving No amplification	Day of rest Friday –Saturday Prayer, meal, synagogue	Some electricity Some driving Some amplification
The synagogue	Male Rabbi Men women separate Men- Kippah/Tallit	Meet, pray Torah - Ark, Bimah Leader- Rabbi	Male or female Rabbi. Men women together Men/women Kippah/Tallit
Bar/Bat Mitzvah	Boys read the Torah, girls the Tanakh Boys wear Tefillin, Tallit, Kippah	Coming of age 12/13 girl/boy Responsibility Hebrew, reading, party	Boys and girls read the Torah. Boys and girls can choose to wear Tefillin, Tallit, Kippah.



USEFUL LINKS:

https://www.bbc.co.uk/bitesize/articles/zfn792p

Daily Practices – Prayer

Jews pray **three times a day** (morning, afternoon, evening).

Prayers often include the **Shema** ("Hear O Israel, the Lord our God, the Lord is One") and the **Amidah**.

Prayer helps Jews stay close to God and remember His commandments.

Weekly Practices – Shabbat

Shabbat is the day of rest, from Friday sunset to Saturday sunset.

Jews light candles, share meals, and attend synagogue.

Work is avoided — it's a time for family, worship, and remembering God's creation driving to the synagogue is not even permitted.

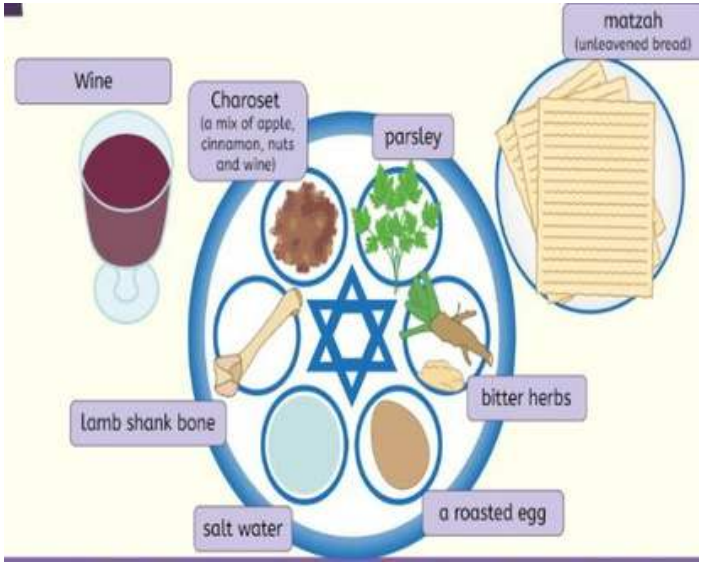
Annual Practices – Pesach (Passover):

Annual festival remembering the Exodus from Egypt when Moses led the Israelites to freedom.

Families hold a Seder meal with symbolic foods (e.g. matzah for unleavened bread, bitter herbs for slavery).

Readings from the Haggadah retell the story of liberation.

Sedar Plate



Tikkun Olam: Repairing the World

- This is a Jewish teaching about making the world a better place.
- It includes acts of kindness, charity, justice, and protecting the environment.
- It encourages Jews to take responsibility for others and society.

Community Practices – Reading the Torah at the Synagogue:

The Torah is read publicly from scrolls during synagogue services. A portion (parashah) is read each week so the whole Torah is completed annually.

Reading is done in Hebrew, showing respect for God's word.

Community Practices - The Synagogue:

The synagogue is the Jewish place of worship and community.

The Ark (Aron Hakodesh) holds the Torah scrolls, facing Jerusalem.

The Bimah is a raised platform where the Torah is read aloud.

A Ner Tamid (eternal light) burns above the Ark, symbolising God's presence.

Synagogues are also places for learning, celebrations, and charity work, led by a Rabbi**.**

Once in a Lifetime – Bar / Bat Mitzvah

A Bar Mitzvah (boy, age 13) and Bat Mitzvah (girl, age 12) mark becoming responsible for keeping mitzvot (commandments) and is when they become an adult.

The child may read from the Torah in synagogue for the first time.

It is celebrated with family, community, and often a party.

Tenses

Me llamo Te	I call myself
llamas Se	You call yourself
llama Nos	He/she /it calls themself
llamamos Os	We call ourselves
llamáis Se	You all call yourselves
llaman	They call themselves
Tengo	I have
Tienes	You have
Tiene	He/she/it has
Tenemos	We have
Tenéis	You all have
tienen	They have
Soy	I am
eres	You are
Es	He/she/ it is
Somos	We are
Sois	You all are
son	They are

Opinions & Pronouns

Adoro	odio
prefiero	detesto
me gusta (mucho)	no me gusta (nada)
me encanta	me irrita
me chifla	me molesta
me interesa	me aburre

For other's opinion use 'le'

Connectives

también	also
pero	but
además	furthermore
sin embargo	however
que	which
donde	where
cuando	when
porque	because

Complexity

Quantifiers

Bastante (quite) un poco (a bit)

Muy (very) realmente (really) Demasiado (too)

Puedo sr - I can be

Puede ser – s/he can be..

Adjectives

amarillo/a/os/as	yellow
atigrado/a/os/as	tabby
azul/ es blanco/a	blue
/os/as dorado/a	white
/os/as gris /es	gold
marrón/es	grey
negro/a /os/as	brown
rojo/a /os/as	black
verde/s	red
	green
grande/s	big
pequeño/a/os/as	small
alto /a/s bajo/a/s	tall
Delgado/a/s	short(height)
	slim
Gordo	chubby
Simpatico/a/s	nice
Gracioso/a/s	funny
Estricto/a/s	strict
Perezoso/a/s	lazy
Mono/a/s	cute

1

MI FAMILIA	MY FAMILY
Un hermano	a brother
Un hermanastro	a step brother
Una hermana	a sister
Una hermanastra	a step sister
Dos hermanos	2 brothers
Un padre	a dad
Un padrastro	a step dad
Una madre	a mum
Una madrastra	a step mum
Mis padres	my parents
Un abuelo	a grandad
Una abuela	a grandmother
Un tío	an uncle
Una tía	an aunt
Un primo	a cousin (m)
Una prima	a cousin (f)
SOY hijo único	**I AM** only child(m)
SOY hijA únicA	**I AM** only child(f)

2

¿tienes animales en casa?
Sí tengo…

Do you have pets at home?
Yes, I have…

un caballo	a horse
un cobayo	a guinea pig
un conejo	a rabbit
un gato	a cat
un pájaro	a bird
un perro	a dog
un pez	a fish
un ratón	a mouse
una tortuga	a tortoise
dos gatos	two cats
dos pájaros	two birds
dos ratones	two mice
dos peces	two fishes

Tiene … años. — It is … (years old).

No tengo un animal. — I haven't got a pet

¿De qué color es tu animal? — **What colour is your pet?**
Mi animal es …+ colour — My pet is … + colour

3

¿De qué color es tu pelo?
What colour is your hair?

Tengo… el pelo	I have…
castaño	brown hair
el pelo negro	black hair
el pelo pelirrojo	red hair fair
el pelo rubio el	hair short
pelo corto el	hair long
pelo largo el	hair straight
pelo liso	hair
el pelo ondulado	wavy hair
el pelo rizado	curly hair

¿De qué color son tus ojos?	**What colour are your eyes?**
Tengo …	I've got …
los ojos azules	blue eyes
los ojos marrones	brown eyes
los ojos negros	black eyes
los ojos verdes	green eyes
Tengo pecas	I've got freckles.
Llevo barba	I've got a beard.
Llevo bigote	I've got a I wear
moustache.	
Llevo gafas	glasses.
Lleva …	He/She wears …

Tenses

PRESENT TENSE	bailar – to dance	comer – to eat	vivir – to live
I	bailo	como	vivo
you	bailas	Comes	vives
he/she/it	baila	Come	Vive
we	bailamos	Comemos	vivimos
you (pl)	Bailáis	Coméis	vivís
they	bailan	comen	viven

Verbos

Ar verbs

Estudiar	to study
Llevar	to wear
Ayudar	to help
Gritar	to shout
Empezar	to start
Terminar	to finish

Opinions & Pronouns

Adoro	odio
prefiero	detesto
me gusta (mucho)	no me gusta (nada
me encanta	me irrita
me chifla	me molesta
me interesa	me aburre

For other's opinion use 'le'

Connectives

también	also
pero	but
además	furthermore
sin embargo	however
que	which
donde	where
cuando	when
porque	because

Complexity

Suelo estudiar – Itend to study
Quiero estudiar – Iwant to study
Tengo que estudiar... - I have to study
Me gustaría estudiar – I would love to study

Adjectives

aburrido - boring
Bueno -good
Divertido - fun
Difícil – difficult
Duro - hard
Fácil - easy
Interesante -interesting
Relajante - relaxing
Simpático – nice
Estricto – strict
Emocionanate – exciting
Práctico – practical
Útil – useful
inútil - useless

El español **es** divertidO La historia es divertidA El español y la historia **SON** divertidOS Las ciencias SON divertidAS

más ....que more...than

1

Las asignaturas School subjects

la educación física	PE
El deporte	Sport
el inglés	English
el español	Spanish
el francés	French
el alemán	German
el teatro	Drama
el dibujo/el arte	Art
la geografía	Geography
la historia	History
la informática	ICT
las matemáticas	Maths
las ciencias	sciences
la música	Music
la religión	RE
la tecnología	Technology
la física	Physics
La quimica	Chemistry
La b i o l o g í a	B i o l o g y

4

2

Lahora	Time
¿Qué hora es? What time is it?	
Esla una.	It's one o'clock.
Son las cinco.	**It's** five o'clock.
Alas cinco	**at** five o'cock
ycuarto =	quarter past
ymedia =	half past
menos cuarto -	quarter to
mediodía	midday
medianoche	midnight

3

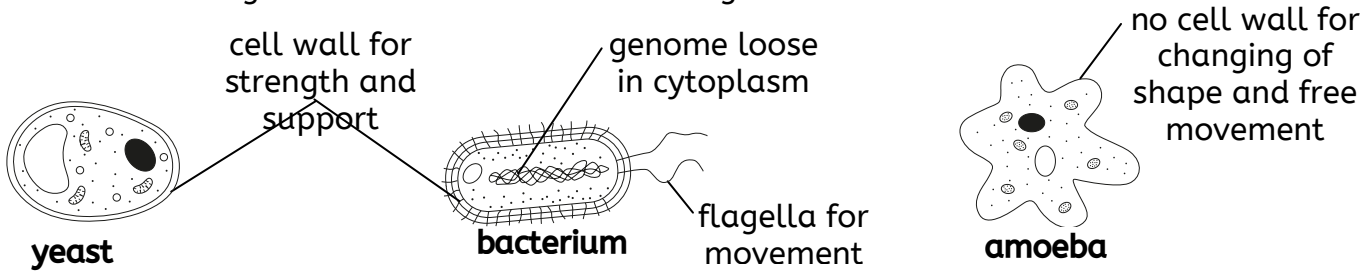
¿Qué tiene tu instituto?
What does your school have?

Mi instituto tiene …
My school has …

los alumnos	pupils
los chicos	boys and girls
los profesores	teachers
el recreo	break
la secretaria	secretary
el uniforme	uniform
un aula (f)	a classroom
una biblioteca	a library
una cafetería	a cafeteria
un comedor	dining hall
el despacho de la directora	the headmistress's office
un gimnasio	a gym
un laboratorio	laboratory
un laboratorio de idiomas	a language lab(oratory)
un patio	playground
unas pistas polideportivas	sports' pitches
una sala de profesores	a staffroom
un salón de actos	a hall
unos servicios	toilets

Unicellular organisms are made of only one cell (e.g. bacteria, amoeba and yeast).

- They can carry out the 7 life processes of living organisms, all in one cell.
- Unicellular organisms share common organelles, but they also have adaptations.
- Unicellular organisms can be helpful or harmful.
- Unicellular organisms use diffusion to exchange substances.



- Used in baking
- Used to make alcoholic drinks

- Supports digestion
- Used to make cheese and yoghurt

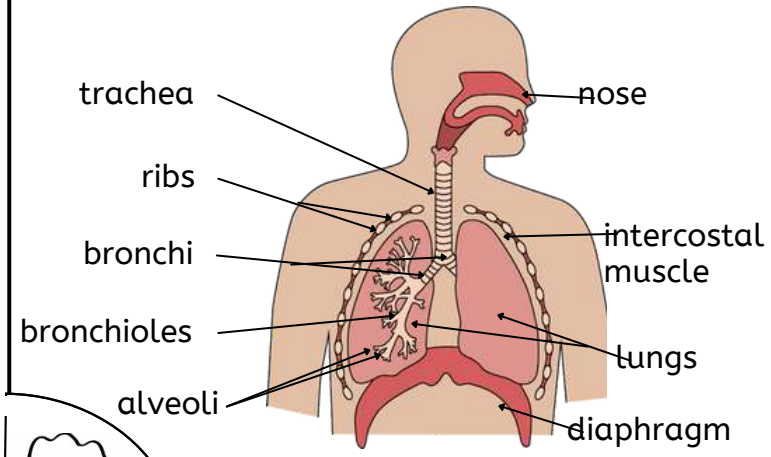
Multicellular organisms are made of many cells (e.g. plants and humans).

- They are larger and more complex than unicellular organisms.
- They cannot rely on diffusion alone for exchanging substances.
- Multicellular organisms depend on tissues, organs, and organ systems working together to exchange and transport substances to cells of the body, to keep cells alive.
- Organ systems in humans include the **gas exchange system**, **digestive system**, **circulatory system**, **skeletal system** and **muscular system**.

Gas exchange system

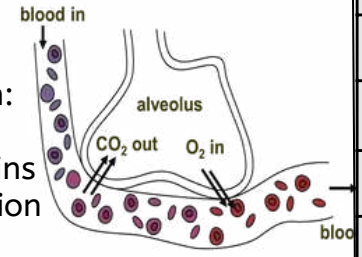
Air is a mixture of gases, including oxygen and carbon dioxide.

The human gas exchange system allows for the exchange of oxygen and carbon dioxide between an organism and its environment. Inhaled air contains more oxygen than exhaled air. Exhaled air contains more carbon dioxide than inhaled air. Oxygen moves from the alveoli into cells and then into the blood vessels (capillaries), while carbon dioxide moves in the opposite direction via diffusion.



Alveoli are adapted for efficient diffusion:

- **good blood supply** maintains the concentration difference
- **large surface area** for faster rate of diffusion
- **thin walls** (one cell thick) to provide a shorter diffusion pathway

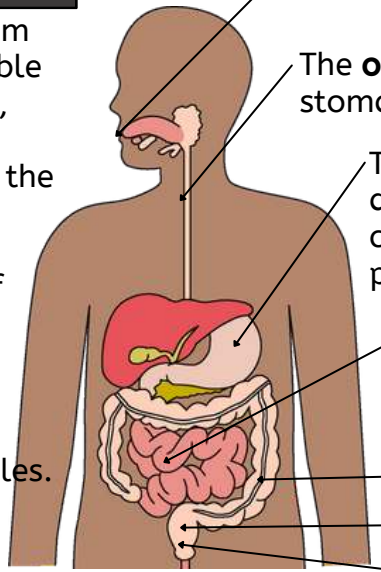


Breathing involves changes in pressure and volume inside the chest, helped by the movement of intercostal muscles and diaphragm, which causes the movement of the ribcage.
Vital capacity is the maximum volume of air exhaled after inhaling fully and can be used to estimate lung volume.

	Inhalation	Exhalation
Intercostal muscles	contract	relax
Ribcage	pulled up and out	released down and in
Diaphragm	contracts and moves downwards	relaxes and moves upwards
Volume in the chest	increases	decreases
Pressure in the chest	decreases	increases
Movement of air	into the lungs	out of the lungs

Digestive system

- The human digestive system breaks down large, insoluble food molecules into small, soluble molecules so that they can be absorbed into the blood.
- **Mechanical digestion:** the physical breakdown of food into smaller pieces.
- **Chemical digestion:** the use of chemical substances to break food down into smaller molecules.



The **mouth** performs both mechanical digestion (chewing) and chemical digestion (saliva).

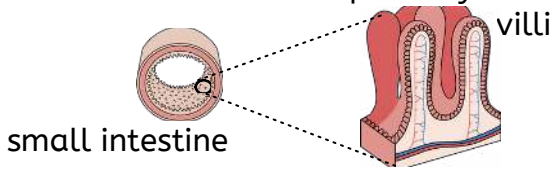
The **oesophagus** connects the mouth to the stomach and uses peristalsis to push food down.

The **stomach** performs both mechanical digestion (muscular tissue contracts) and chemical digestion (glandular tissue producing chemical substances).

The **small intestine** breaks down food chemically. Absorption of digested nutrients also happens here.

Adaptations:
The small intestine is covered in many villi for efficient absorption by diffusion:

- villi provide a **large surface area** for faster rate of diffusion
- villi have **good blood supply** to maintain the concentration difference
- villi have **thin walls** (one cell thick) to provide a shorter diffusion pathway



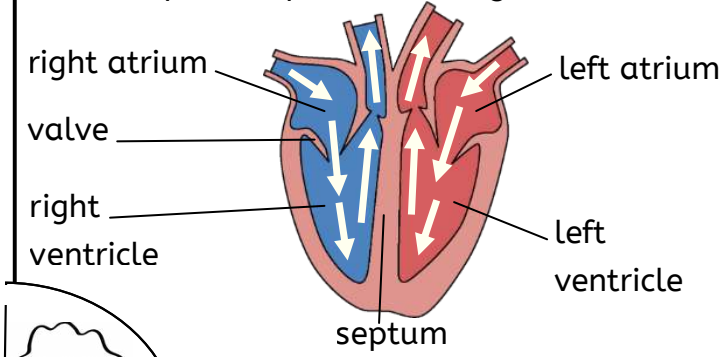
The **large intestine** reabsorbs water from undigested food back into the blood.

Faeces (poo) are stored in the **rectum**.

Faeces and waste gases are egested from the **anus**.

Circulatory system

- The circulatory system transports useful molecules and waste around the body. The human circulatory system consists of the heart, blood and blood vessels.
- The heart has four chambers: two atria and two ventricles.
- Valves ensure blood flows in the right direction.
- The septum separates the right and left sides of the heart.



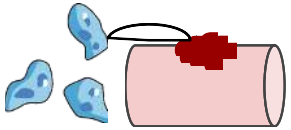
The heart pumps oxygenated blood from the lungs to the body and deoxygenated blood from the body to the lungs (double circulatory system).



Arteries	Capillaries	Veins
• Blood taken away from heart • High pressure blood • Thick muscular and elastic walls • Small lumen	• Exchange substances between blood and cells • Very low pressure blood • Very thin walls (one cell thick) • Very small lumen	• Blood brought back to heart • Low pressure blood • Thin walls • Large lumen • Valves prevent back flow

Circulatory system (continued)

Blood is a fluid that transports substances, useful molecules and waste around the body. Blood helps the body to defend against diseases and to form scabs to heal cuts.



Platelets help with blood clotting for wound healing.

Plasma carries the other blood parts, nutrients, waste and carbon dioxide. It is yellow coloured and mostly water.

Red blood cells carry oxygen to all the cells of the body.

White blood cells help defend against disease.

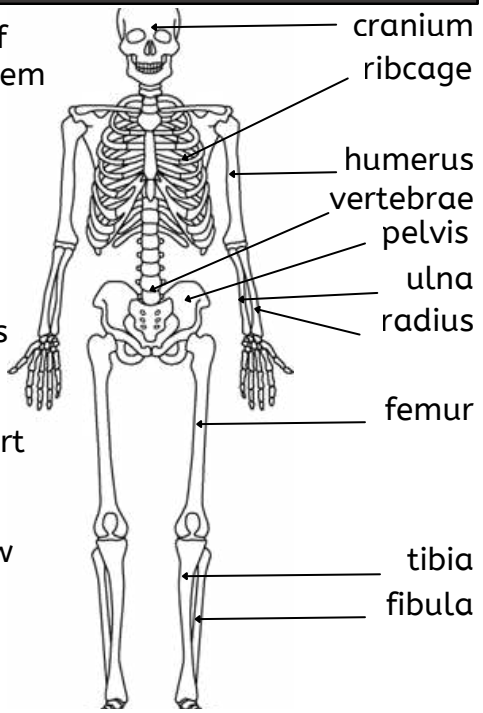
Adaptations of the red blood cells:

- biconcave shape →large surface area for faster oxygen diffusion
- contains haemoglobin → carry oxygen
- no nucleus → space for more haemoglobin → more oxygen

Red blood cells, white blood cells and platelets are made in the **bone marrow** - soft tissue inside large bones protected by the hard part of the bone around it.

Skeletal system

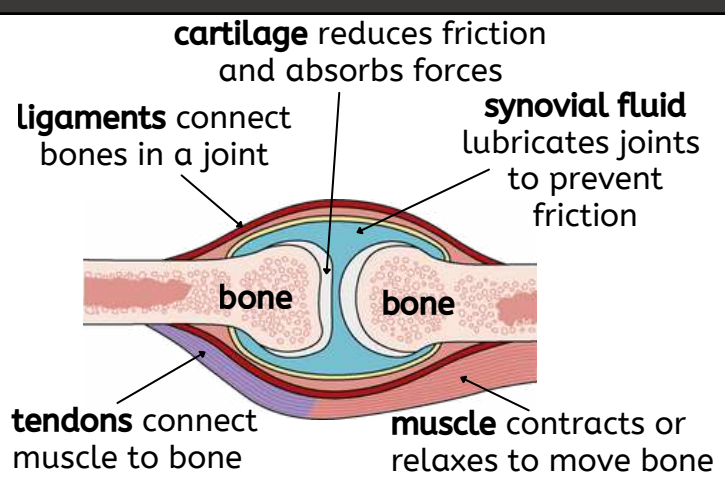
Four functions of the skeletal system are **support**, **movement**, **making new blood cells** and **protection** of organs (e.g. the cranium protects the brain and the ribcage protects the heart and lungs).
Bones are living tissues that grow and change.



Joints, muscles and movement

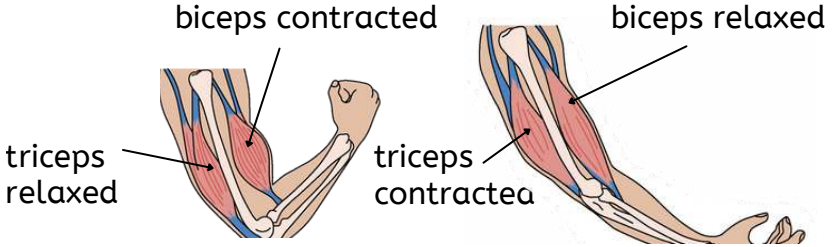
A joint is the point where two or more bones meet in the body. Joints connect bones and allow the body to move and bend. Different joint types allow various movements:

- **hinge** joint: movement backwards and forwards e.g. the knees and elbows
- **ball-and-socket** joint: movement in many directions e.g. the hips and shoulders
- **pivot** joint: twisting movement around a fixed point e.g. the neck
- **fixed** joint: does not allow for any movement e.g. in the cranium



Ageing can lead to joint wear, inflammation and arthritis. Arthritis causes joint pain and affects synovial fluid and cartilage.

- Muscles can **only** pull, they **cannot push**;
- Muscles work in **antagonistic muscle** pairs. When one muscle contracts to pull the bone in one direction, the other muscle relaxes to allow movement.



- The way in which muscles and bones work together to exert forces is called **biomechanics**.
- **Muscle strength** varies based on muscle size, age, sex, training, nutrition and injury.

Year 7 Using media

Formatting can be using tools like **bold**, *italic*, underline, changing colour, font style and size, alignment and many more.

Formatting can be used for many reasons. Including to make text easier to read, easier for the audience to use, highlight important information or attract attention.

It is important to select the appropriate formatting for the audience!

Images play an important role when using software. It is important that **appropriate** images are used, ones that meet the requirements of the **audience** and the **purpose** of whatever is being created.

A **blog** is a regularly updated website or web page, typically one run by an individual or small group, that is written in an informal or conversational style.

Is it real? Is it true?

When researching and reading stories online you need to check that they are **reliable**, **trustworthy** and **credible**. Anyone can upload content so it is not always accurate.

·Check the source, find out which other sources are reporting it

·Check whether other sites are saying the same thing,

·Don't trust all the stories and all pictures

·Check for facts not rumours

·Check any citations or references

When you are researching a topic you will come across a lot of useful information. Once the reliability and accuracy has been checked you may decide to use the information. Check the law

Plagiarism using someone else's work or ideas and using them as if they were your own. This can be any type of work either printed or electronic.

C**itation** the audience where the information came from. Anything that is used needs to have **citations** or **references** to the original work. the audience details about the source so that they can see that the source is relevant and recognised so they can find the source themselves if they want to.

It is the law

Copyright Law gives the creators of literary, dramatic, musical, artistic works, sound recordings, broadcasts, films and typographical arrangement of published editions, rights to control the ways in which their material may be used.

Copyright

Creative Commons(CC) license is one type of copyright license. This allows the copyright owner to say exactly what other people can and can't do with or to their work.

creative commons

They help copyright owners share their work while keeping the copyright. For example, a Creative Commons licence might allow other people to copy and distribute the copyright owner's work, if they give them credit.

Keywords

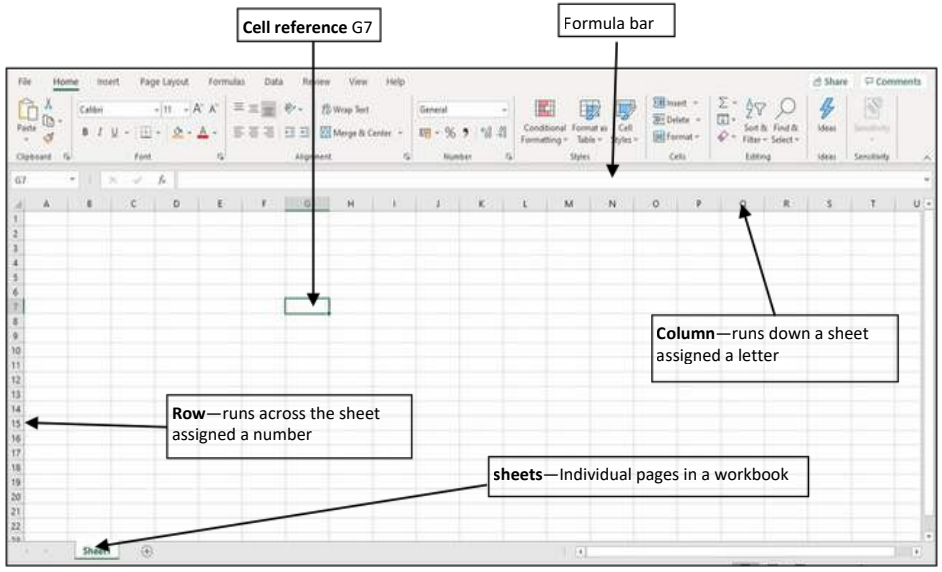
Format
Source
Licensing
Audience
Plagiarism
Copyright
Citation
Blog
Credibility
Referencing
Appropriate

Year 7 Modelling Data Spreadsheets

Spreadsheets are used to model data.
That means that they can be used to perform calculations on data and make predicts.

Data and **information** are not the same.
·**Data**: facts and figures in their raw form
Information: data that has been given structure or meaning

For example:
Data—10, 2107, 18
Information—Time 10am, date 21st July, temperature 18



The tool bar ribbon at the top allows for **formatting** of the data. Changing colour, size, style etc

There is a **sort** and **filter** tool that allows for data to be arranged in ways that is most useful for the user e.g. alphabetical, highest, lowest etc.

Conditional formatting can be set to allow the cell **formatting** to **automatically** change if certain criteria is met. For example a cell might turn red if there was a negative number

In order to complete calculations spreadsheets make use of **formula**.
A formula uses the following basic symbols
The **=** symbol is always at the start of a formula
The **+** symbol is used for addition
The **-**symbol is used for subtraction
The ***** symbol is used for multiply
The **/** symbol is used for divide

Functions are also used which are predefined formula.

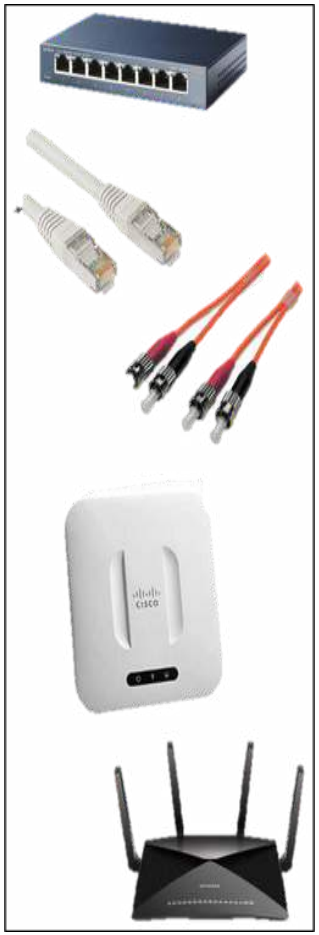
Common **functions** are
SUM—adds a range of cells
MAX—returns the largest value from selected cells
MIN—returns the smallest value from selected cells
AVERAGE—provides the arithmetic mean (average) of selected cells
COUNTIF—counts the number of cells in a range that meet the given criteria
IF—allows logical comparisons
COUNTA—counts cells that are not empty

Data can be gathered from different sources
·**Primary** source: collecting data yourself
·**Secondary** source: someone else collects the data

Each box on a spreadsheet is called a **cell** and they hold data.
Each **cell** has a unique **cell reference** to identify its location.
You can fill data automatically by using AutoFill

Year 7 Networks

Key Words	
Bandwidth	Amount of data that can be moved from one point to another in a given time.
Buffering	Data arriving slower that it is being processed
Internet	A worldwide network of computers
internet of Things (IoT)	Takes everyday 'things' and connects them to the Internet e.g. smart light bulb, fridge, heating etc.
IP address	A unique address for every device on the internet
Packet	Networks send/receive messages in units called packets
Protocol	All methods of communication need rules in place in order to pass on the message successfully. These sets of rules are called 'protocols'
Search Engine	A website that allows user to look up information on WWW e.g. Bing, Google etc.
Web browser	Piece of software(code) used to view information on the Internet
WWW	Part of the Internet that contains websites and webpages. NOT the same as the Internet.



A **network** is where devices are connected together usually by cable or Wi-Fi. This could be a few computers in a room, many computers in a building or lots of computers across the world.

Wired and **Wireless** data transmission
A computer network can be either wired or wireless.

·Wired networks send data along cables.

·Wireless networks send data through the air using radio waves.

Bandwidth—Bandwidth is the amount of data that can be moved from one point to another in a given time. Higher bandwidth = more data per second

Bandwidth is measured in bits per second
A bit is the smallest unit of data
Data transfer rates are now so good that bandwidth is usually measured in Megabits per second (Mbps)
1Mb—1 million bits

Internet services

There are a range of services provided by the internet. These include:
·World Wide Web
· Email
·Online gaming
·Instant messaging
·Voice over IP (VoIP) –audio calls
·Internet of Things (IoT)
·Media streaming (e.g. watching Netflix online)
The rules for each servicearedifferent.
As a result, a different protocol is used.
HTTP—HyperTextTransfer Protocol—used so that data can be understood when sent between web browsers and servers.

HTTPS—is the secureversion of HTTP where data sent is encrypted.

Network Hardware—physical equipment required to set up a network
Hub—Connects a number of computers together. Ports allow cables to be plugged in from each connected computer.
Router—Used to connect two separate networks together across the internet
Sever—A powerful computer which provides services to a network
Cable—Used to connect different devices together. They are often made up of a number of wires.

PROGRAMMING 1 - SCRATCH

Scratch is a **block based programming language**. We can use predefined code drag and drop blocks to create a sequence of code.

Key Words	
Abstraction	Identify the important aspects to start with
Algorithm	Precise sequence of instructions
Computational thinking	Solving problems with or without a computer
Debugging	Looking at where a program might have errors or can be improved
Blocks	Scratch bricks that we can use to code algorithms
Decomposition	Breaking down a problem into smaller parts
Execute	A computer precisely runs through the instructions
Iteration	Doing the same thing more than once
Selection	Making choices
Sequence	Running instructions in order
Variable	Data being stored by the computer

A computer inputs (this might be automatic or via human input), processes that input and then produces an output. as well as producing an output. For example when you use a keyboard and mouse, the mouse is used to input data into the computer to be processed and the output is visible on the computer monitor.

Sequence, **selection** and **iteration** are all processes. In order for computers to perform tasks there is more that is needed. For example a computer will take an **input** (this might be automatic or via human input) which the computer will then **process** and the **output** will be visible on the computer monitor.

Operators
Comparisonoperatorsallowustocompare using **< > +**
Logical operators use **AND, OR, NOT**

A **selection**statement in programming allows a computer to **evaluate**an **expression**to **'true'**or **'false'** and then perform an action depending on the outcome.

Variables are used to store data for use in a program. They can store lots of different types of data such as names and scores.
So set variable score to equal 0
If I scoreagoalthenincreasevariableby1

Count controlled iteration will execute the commands a set number of times. Example:"perform 200 star jumps"

Condition-controlled iteration will execute the commands until the condition you set is no longer being met. Example: "perform star jumps until 3pm"

We use algorithms in every day life . Example an algorithm to get to school, to make a cup of tea, to make a pizza, to order a takeaway. These are just precise sequences of instructions.

DIGITAL SKILLS

IMPACT OF TECHNOLOGY

Cyberbullying is similar to bullying but tends to occur online. Cyberbullying cancome in manyforms. Some examples are:

·Threatening someone to make them feel scared ·Harassing someone by repeatedly sending them messages ·Ruining somebody's reputation ·Excluding someone from a group

·Stealing someone's identity andpretendingtobe them

·Publicly displaying private images or messages

Key Words	
Audience	The people you are communicating, presenting information to
Catfishing	A person pretends to be someone they are not.
Collaboration	Working effectively together
Digital tattoo/Digital footprint	Online reputation that is permanent
Email	A tool for online communication Areas/items that could
Hazards	cause damage or injury Devices are connected together
Network	usually by cable or Wi-Fi. A way to ensure no one access
Password	your data or information Be mindful of how you are
Respect	responding to others Making sure your online information
Secure	is safe

Social media settings

·Profiles should always be set to private ·Profile images should not reveal locations ·Profile images should not be easy to recognise; it is much better to use a picture of a pet or a cartoon character ·Don't reveal locations —this makes it easy to find out where you are. ·Making your date of birth public makes it easy for hackers to steal your personal information and set up fake accounts in your name. ·You should never reveal your phone number, email address, or home address on a public site ·You should never reveal your current location on social media ·Putting your full name, including a middle name, makes it easy for someone to steal your personal information. Always use a nickname or shortened version of your name

Do you really want to send that? Think before you click. It is easy to send comments from the other side of a screen. It is not easy to then remove them. Actions need to be considered before mistakes are made.

Using technology appropriately, carefully and positively leads to positive digital citizens. Digital citizenship to the responsible use of technology by anyone who uses computers, the Internet and digital devices to engage with society on any level.

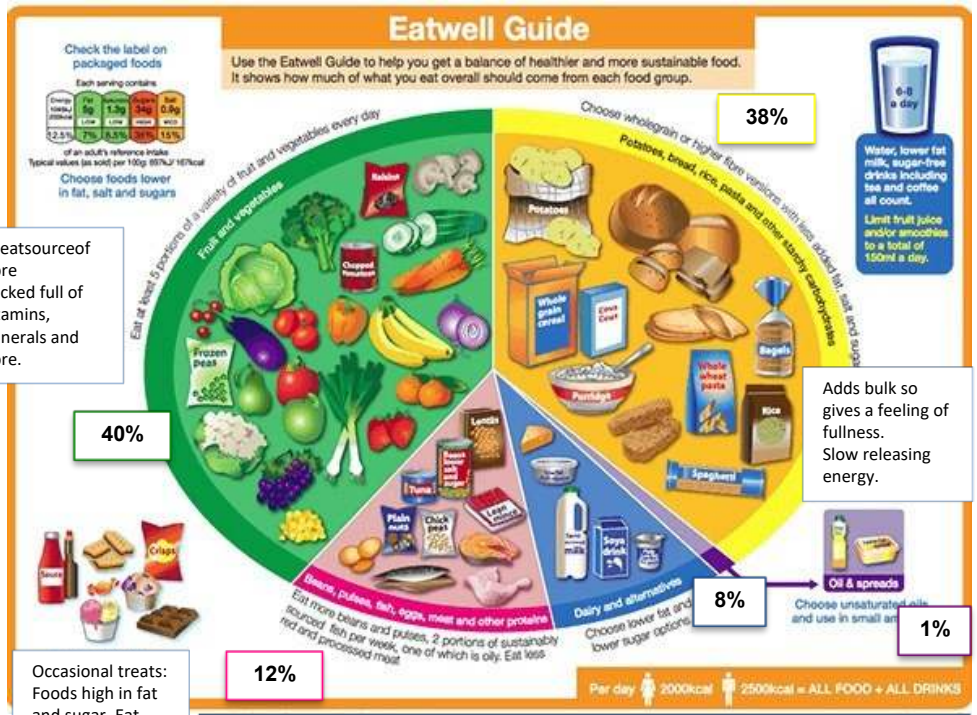
Secure **passwords** No one should be able to guess/work out your password. Current government advice is to use 3 random words

Whereto get help

Talk to a trusted adult

https://www.ceop.police.uk/

https://www.childline.org.uk/



Greatsourceof fibre
Packed full of vitamins, minerals and fibre.

Occasional treats: Foods high in fat and sugar. Eat less often.

8 tips for eating well

1. Base your meals on starchy foods.
2. Eat lots of fruit and vegetables.
3. Eat more fish –including a portion of oily fish each week.
4. Cut down on saturated fat and sugar.
5. Eat less salt –no more than 6g a day for adults..
6. Get active and be a healthy weight.
7. Don't get thirsty.
8. Don't skip breakfast.

Nutrient	How	Why
Cutting Fat	• Eat more chicken and fish and less red meat • Use skimmed or semi-skimmed milk • instead of full fat milk • Grill food instead of frying • Cut fat off meat before cooking	• Overweight • Obesity • Increase in Cholesterol in the blood • Heart attack. • Type 2 diabetes
Cutting down on Sugar	• Avoid fizzy drinks and high calorie drinks. • Have fruit juice or water instead. Eat fewer cakes, biscuits and sweets Eat more fruit as an alternative Try the natural sweetness of fresh fruit in puddings instead of sugar	• Overweight • Obesity • Heart attack. • Type 2 diabetes
Have more Fibre	• Eat lots of fresh fruit and vegetables • Eat more wholemeal flour, bread, pasta, rice • Use more canned beans, peas and lentils eat more • Try jacket potatoes with a variety of fillings	• Helps to protect against diseases of the bowel. • Gives you a feeling of fullness and so can help in diets.
Eat less salt	• Use herbs and spices as an alternative to salt	• Too much salt can lead to high blood pressure. • This will increase the risk of suffering heart problems and strokes.

Extra - Read/watch/do

https://www.youtube.com/watch?v=7MlE4G8ntss

You will be assessed on:

- Food Hygiene and Food Spoilage
- Fruit/Sensory evaluation
- Healthy eating tasks and the 8 tips for eating well.
- Vitamins

Linkstocurriculum: Apply current healthy eating advice, and understanding of people's needs, to develop diets for different individuals.

Literacy / key words

Personal Hygiene: people are sources of contamination. Personal hygiene must be followed to prevent food poisoning such as:-Wash hands before and after handling foods; tie or cover hair; remove jewellery;

Cross Contamination: The transfer of bacteria into food: Food to food, Food handler to food, Equipment to food

High Risk foods: are foods high in protein and moisture e.g. meat, dairy, cooked rice, gravy. Must be stored at a temperature below 5◦C to prevent bacteria growth.

Types of Hygiene Hazards

Physical: fly, hair, broken glass, fingernails, plaster.

Biological: bacteria such as E. coli, Salmonella, Staphylococcus aureus. Bacillus cereus, Campylobacter.

Chemical: pesticides, herbicides, cleaning chemicals

Preventing cross contamination

Preparing food safely using the 4Cs

Cleaning
- Keep yourself and hands clean
- Use clean equipment
- Use clean dish clothes and tea towels

Cooking
- Cook raw foods until the core is 75C, check with a temperature probe.
- Reheat foods to 75C
- Never reheat food more than once

Chilling
- Cool cooked foods for no longer than 90mins before refrigerating .
- High risk foods must be stored below 5C

Cross Contamination
- Store raw foods away from cooked foods
- Use separate equipment (chopping boards and utensils
- Wash hands after handling raw meat and before preparing food

Linkstocurriculum: Demonstrate and apply the principles of cleaning, preventing cross contamination, safe storage of food including chilling, cooking food thoroughly; reheating food until it is steaming hot.

EnzymicBrowning: The process where fruit and vegetable turn brown due to them being exposed to oxygen (oxidisation).

Knife Skills

Claw grip

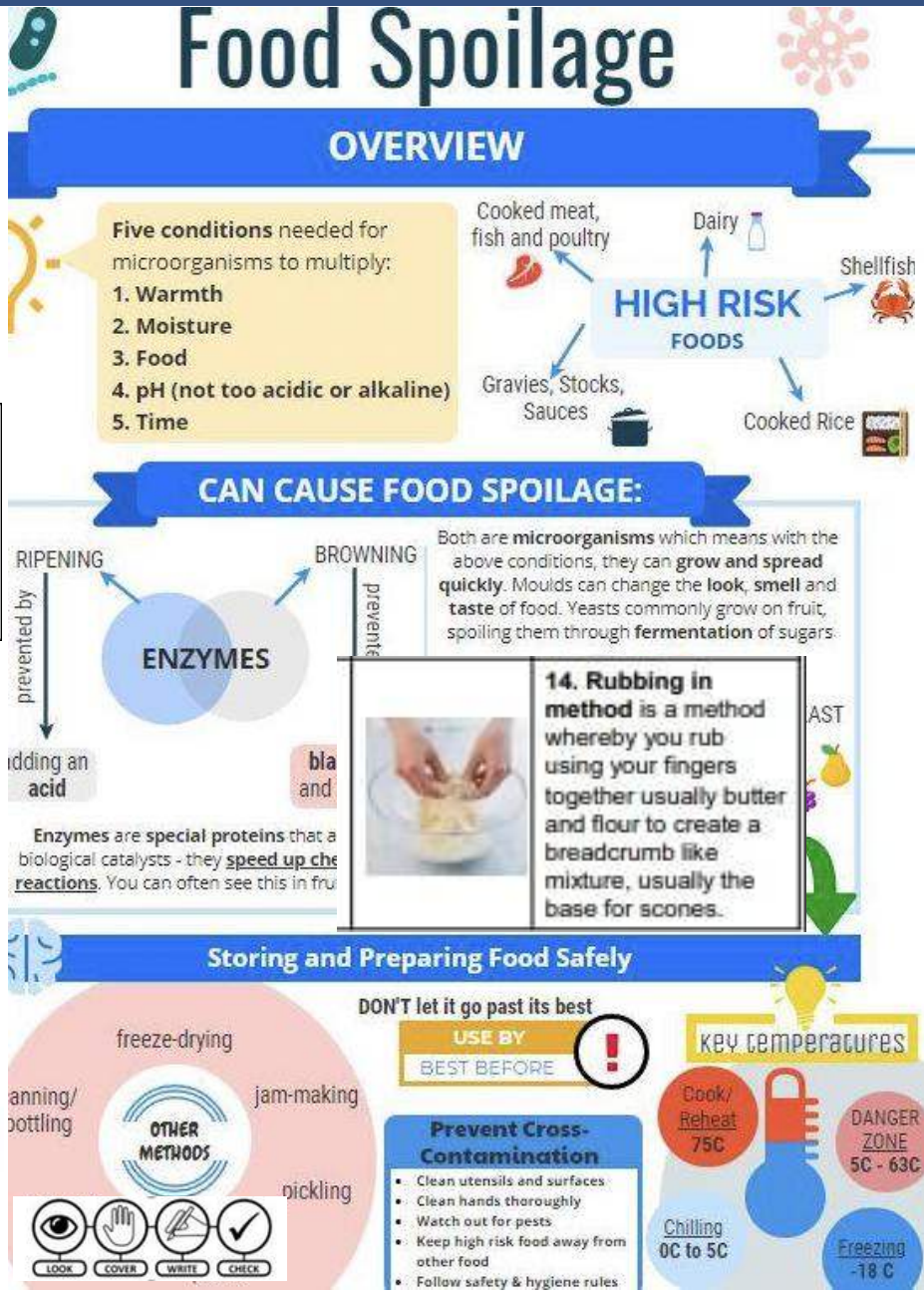
Bridge hold

Rondelle

Julienne
3mm*3mm*3~5cm

Medium Dice
1.25*1.25*1.25cm

Small Dice
6*6*6mm



Key abbreviations: Weights and Measurements		
L	Litres	
g	Grams	
ml	millilitres	1000ml =1 litre
Kg	kilograms	1000g
Tbsp	tablespoons	15ml
Tsp	teaspoon	5ml
1pt	1 pint	568ml

Chemical raising agents produce CO2.
Alkali+ Acid+ liquid+ CO2
Makes baked products like scone rise, light and soft.

Rubbing in method:

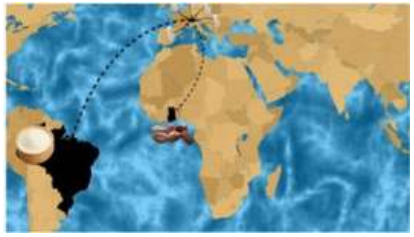
Is a method of rubbing your fingers together usually butter and flower to create a breadcrumb like mixture, used to make scones.

Literacy / Key terms

Food Miles:
The distance food has travelled to get to your plate. Food must travel from the farm it is grown on or the factory it is made in to a supermarket or shop to be sold.

Carbon Emission
Harmful gases such as carbon dioxide are released into the earth's atmosphere when we use fossil fuels (coal and oil) to provide energy. We need energy to grow, produce and transport food. Some food uses more energy than others.

Local: a place close to where you live. Fruit and vegetables that were grown near you would be considered local.



Chocolate –ingredients coming from all over the world has a lot of food miles.

Vitamin facts

Vitamin	Foods	Functions	Deficiency
Vitamin A	Cheese, milk, yoghurt eggs, oily fish, yellow, redand green (leafy) vegetables, such as spinach, carrots, sweet potatoesand red peppers,yellow fruit, such as mango,papaya and apricots	Fighting infection, better vision, keeping skin healthy	Night blindness
Vitamin D	Our body creates this from direct sunlight but it is in: oily fish, red meat and egg yolks, liver	Helps keep bones, teeth and muscles healthy	Bone deformities such asRicketsin children, and Osteomalaciain adults.
Vitamin E	Vegetable oil, olive oil, nuts, seeds, cereals	Healthy skin, eyes and immune system	Rare
Vitamin K	Green vegetables, vegetable oil, cereals	Healing wounds	Rare. Problems with blood clotting

https://www.bbc.co.uk/bitesize/topics/zjr8mp3/articles/zjnxwnb

Strawberries grown in Manchester

Task: When you next visit your supermarket check the food labels to see where the fruits and vegetables in your basket comes from.

Extra - Read/watch/do

https://www.bbc.co.uk/bitesize/articles/zjnxwnb#zktxywx

Linkstocurriculum: Examine where and how a variety of ingredients are grown, reared, caught, and processed, and consider sustainability and the impact of different choices on the environment. Define and demonstrate how to apply the principles of nutrition; that food and drinks provide energy and nutrients in different amounts; that they have important functions in the body; and that people require different amounts during their life and the implications of dietary excess or deficiency.

Design and Technology . polymers

Literacy / key words Polymer
Polymer is another name for plastic.

Thermosetting polymers

Can only be formed once. They are hard to recycle. They are good insulators and are resistant to heat and chemicals.

Thermoforming polymers

Can be heated and formed repeatedly. They are recyclable.

Crude oil

A primary source of plastics .

Bio degradable

able to decay naturally and in a way that is not harmful.

Micro plastics

small plastic pieces which can be harmful to our oceans

Vacuum forming

The simplest type of plastic forming, that uses a moldand vacuum pressure.

Extra - Read/watch/do

Thermoforming polymer	Physical properties	Working properties
Acrylic (PMMA)	Hard, brittle, shiny, available in a wide range of colours	Resists weather well, can be cut, folded and polished well, scratches easily, used for car lights, visors and baths
High impact polystyrene (HIPS)	Rigid, cheap, available in a lot ofcolours	Can be cut and vacuum formed easily, food safe but toxic when burned, used for CD cases and yoghurt pots
High density polythene (HDPE)	Stiff, strong, lightweight	Lightweight and flexible, can be recycled well, used for washing baskets, pipes and chairs

Thermosetting polymer	Physical properties	Working properties
Melamine formaldehyde	Hard, brittle	Food safe, printable surface, used for picnic wear
Polyester resin	A resin and a hardener, sets clear and smooth	Strong, heat resistant and good insulator, used as waterproofing and for encapsulating items
Urea formaldehyde	Smooth finish, limited colours	Heat resistant, hard, brittle and easily injection moulded, used for electrical fittings

ACCESSFM

- **Aesthetics** –
How visually appealing is the design?
- **Cost**
Is the product affordable to make or buy?
- **Customer**
Who is the target audience for this?
- **Environment**
How eco-friendly or sustainable is it?
- **Safety**
Is it safe for users to operate?
- **Size**
Are the dimensions suitable for its purpose?
- **Function**
Does it perform its intended function effectively?
- **Materials**
Are the materials appropriate?

CAD and CAM
Computer Aided Design (CAD) drawing allows products s to be manufactured using Computer Aided Manufacture (CAM) Computer aided manufacture is very fast and accurate and requires less human intervention.

CAD
Techsoft2d design

CAM
Laser cutter

Watch:
the problems with plastics video
https://www.bbc.co.uk/bitesize/articles/z4d62v4

Youwillbeassessedon

- Your knowledge of polymers
- Your ability to analyse exiting products
- Your completed product (ball bearing maze)

Linkstocurriculum

Make
select from and use a wide and complex range of materials and components, taking into account their properties

Design and Technology . Timbers

Literacy / key words
Coniferous
Soft woods come from coniferous trees. They keep their leaves all year and are quick growing.

Deciduous

Hardwoods come from deciduous trees. These are slow growing and loose their leaves in the winter.

Manufactured board

Manufactured board is a natural timber that is combined with adhesive to make a composite material. Examples include MDF, chipboard and hardboard

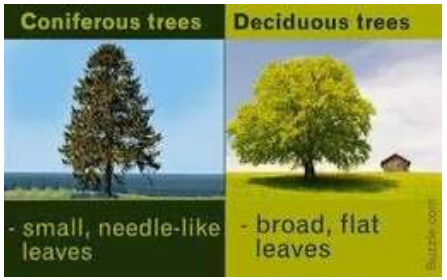
Life cycle assessment

(LCA) can be used to analyse all the stages in a product's life and highlight the impact it will have on the environment..

Softwood	Physicalsand Working properties
Larch	Pale coloured with a contrasting darker grain, knotty. Durable, easy to machine, high sap content gives it good water resistance, used for exterior building and flooring
Pine	Pale coloured with aesthetically pleasing grain. Lightweight, easy to form, used for construction and decking
Spruce	Pale cream with an even grain. Easy to form, takes stain colour well, used for construction and furniture

Hardwood	Physical properties and Working properties
Ash	Pale coloured, narrow grain Flexible and good for steam bending, tough, used for sports equipment
Teak	Teak is a durable, oily wood with a tight grain. It is moisture resistant, making it a good choice for outdoor use, egoutdoor furniture. It is also used in boat decks, chopping boards and flooring.
Oak	Moderate-brown colour with unique and attractive grain markings Tough and durable, polishes well, used for quality furniture

Manufactured board	Physical and Working properties
Medium-density fibreboard (MDF)	Smooth, light brown, can be veneere. Smooth and easy to finish, absorbs moisture so not suitable for outdoor use, used for kitchens and flat pack furniture
Plywood	Odd number of layers of veneer glued at 90 degree angles for strength, aesthetically pleasing outer layer Easy to cut and finish, can be stained or painted, used for shelving, construction and toys
Chipboard	Compacted wood chips, laminated with a variety of coverings, end cuts are difficult to finish Strong but absorbent to water, used for veneered worktops and flooring



Extra - Read/watch/do

Watch:
FSC

https://www.youtube.com/watch?v=HBScUXDlF90&t=2s

You will be assessed on

- Your knowledge of timbers.
- Your ability to evaluate a final product
- Your completed product (desk tidy)

Links to curriculum
Make
Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.

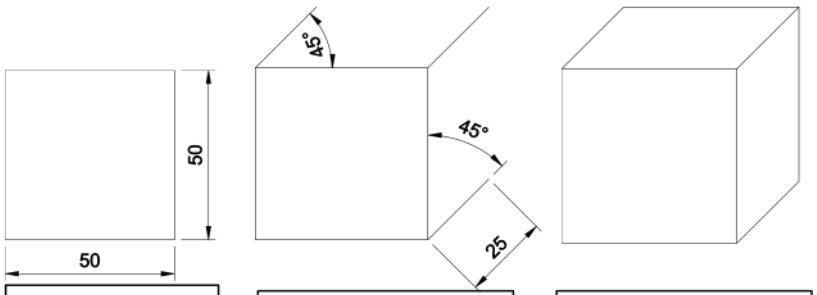
Literacy / key words
Rendering
Rendering with colour pencils involves layering and blending colours to create detailed, textured, and realistic illustrations or designs.

Oblique drawing
Oblique drawing is a way to make a 3D picture where the front looks normal, and the sides are drawn at an angle to show depth.

Isometric drawing
Isometric drawing is a way to make 3D pictures where all sides are drawn at equal angles, showing depth clearly.

1 point perspective
1-point perspective drawing is a technique where all lines meet at a single vanishing point on the horizon, creating depth.

Oblique drawing



Draw a square 50 mm x 50mm.

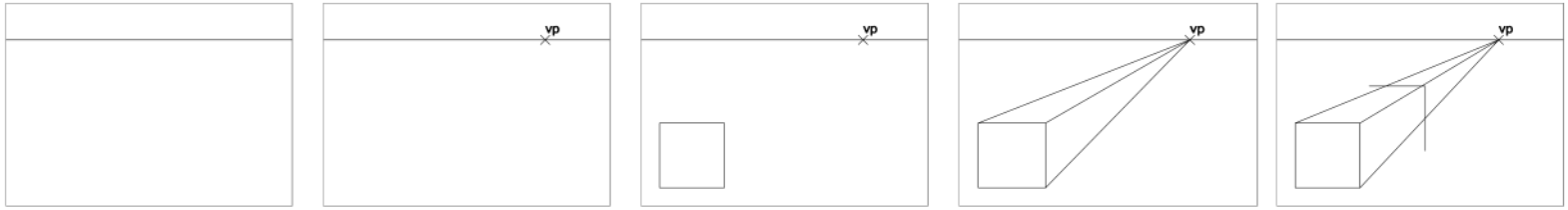
Draw 3 lines that are 25mm long at an angle of 45°.

Draw the lines for the back of the cube.

Biomimicry

Biomimicry is when designers copy ideas from nature to solve problems. For example, **Velcro**was inspired by burrs sticking to animal fur, and **bullet trains**were shaped like a kingfisher's beak to reduce noise and drag. Nature's designs often lead to efficient, sustainable solutions.

One point perspective



Draw a line across the top of the page.

Put an x where the vanishing point is

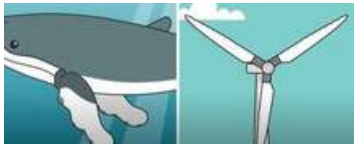
Draw a square in one of the bottom corners of the page.

Draw construction lines from each to the vp.

Add the lines for the back of the cube.

Extra - Read/watch/do

Watch:
Biomimicry



https://www.youtube.com/watch?v=V2GvQXvjhLA

You will be assessed on

- Your ability to use a range of design/drawing techniques.
- Your ability to write a detailed specification.

Links to curriculum
Design
use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses